

Appl. No. 09/857,852
Amdt. dated January 26, 2004
Reply to Office Action of September 25, 2003

Amendments to the Specification

Please replace paragraph 4 with the following rewritten paragraph:

The core layer may be formed of plastic concrete and may be introduced in a flowable state between the preformed material layers to be ~~moulded~~ molded therein. The preformed material layers provide formwork for the ~~moulding~~ molding. The preformed material layers are ~~moulded~~ molded and are retained in their ~~moulds~~ molds to provide the formwork for ~~moulding~~ molding of the core layer.

Please replace paragraph 6 with the following rewritten paragraph:

The present invention also provides a mould ~~mold~~ assembly for ~~moulding~~ molding a pipe, the assembly comprising a plurality of ~~moulds~~ molds formed of polymer concrete.

Please replace paragraph 9 with the following rewritten paragraph:

Referring to the drawing, the two preformed laminates are in the form of reinforced plastic pipes or tubes 10~~[[,]]~~ and 12, formed by filament winding a pipe, by hand lay up, or by forming a sheet which is then rolled and bonded to form a tube. A mould ~~mold~~ assembly is provided which comprises a base ring mould ~~mold~~ 14 and a top ring mould ~~mold~~ 16. The inner tube 10 ~~locates~~ is located in the mould ~~mold~~ assembly to extend between the base ring mould ~~mold~~ 14 and the top ring mould ~~mold~~ 16. The outer tube 12 also extends between the ~~moulds~~ molds 14~~[[,]]~~ and 16, locating in respective slots in the ring ~~moulds~~ molds. A cone 18 ~~locates~~ is located above the mould ~~mold~~ 16 and assists in guiding the plastic concrete when it is poured into the annular space between the tubes 10~~[[,]]~~ and 12. The cone 18 also centrally locates the inner tube 10. After completion of the casting of the plastic concrete, as hereinafter described, the cone 18 is removed and

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a mould mold 20 is fitted, further plastic concrete then being poured into the gap between the pipe 10 and the mould mold 20 to form the top spigot of the pipe. All of the moulds mold 14, 16, 18 and 20 are held together by tie bars.

Please replace paragraph 10 with the following rewritten paragraph:

The moulds molds 14, 16, 18 and 20 are cast in polymer concrete so as to reduce costs. From one machined mould mold there can be cast numerous polymer concrete moulds molds so that the unit cost is lower and the polymer concrete moulds molds can be produced on site.

Please replace paragraph 16 with the following rewritten paragraph:

With previous methods of constructing pipes using plastic concrete, a pipe has ~~is~~ required to have a large cross-section to be strong enough, thereby increasing the weight of the pipe. Although this does not cause a particular problem when the pipe is to be used as a micro tunnelling tunneling pipe, the weight of the pipe is important with conventional open trench applications. In many cases a crane cannot be positioned alongside where the pipe is to be laid and this means that in order to lift the pipe the crane would need to have its jib extended, which reduces its load carrying capabilities. ~~Also with~~ Also, with previous methods an inner liner ~~has had to~~ must be strong enough to resist buckling loads caused by the head of the plastic concrete when being poured. This increased cost and the liner cost often became as much as 75% of the cost of the finished pipe. Where a thick liner is used, pipe length is restricted, unless there is provided an internal support shutter which is difficult to manufacture and remove without damaging the inner liner. If a collapsible mandrel is used, this makes the mould mold cost prohibitive, and it is difficult to make a collapsible mandrel over 3 metres.

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Please replace paragraph 18 with the following rewritten paragraph:

In addition, previous pipe mould mold assemblies have used metal shutters which are expensive to manufacture and are restricted in length, making it necessary to join segments together. Such joints make the overall shutter very heavy and often difficult to produce. An outer abrasive resistance surface for the pipe has to be applied to the inner face of the shutter by hand, which takes time, and the lining has to cure before the shutter mould mold can be assembled to the other moulds molds. Due to the weight of the shutter and its height, an overhead crane is required and it takes time to assembly assemble and disassemble the shutter. Also previously, ring moulds molds have been machined out of steel and were therefore expensive and heavy, increasing cost.

Please replace paragraph 19 with the following rewritten paragraph:

A pipe which is manufactured as hereinbefore described, using the mould mold assembly of the drawing, can be easily produced on site and meets the following requirements: lightweight but strong; low cost; corrosion resistant; easy to install; and available in large volumes. Large pipe projects stretch for many miles and transportation of pipe can be a big cost, particularly if the pipes have to be imported. To produce a pipe as hereinbefore described requires very little capital investment and no major infrastructure, only a covered area with a flat concrete floor. On completion, equipment can be removed to another site.